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PEER WORK, PEER TALK AND LANGUAGE ACQUISITION IN SINGAPORE PRIMARY CLASSROOMS

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Introduction

English language use and opportunities for language learning by Singaporean children in P1 and P3 were investigated in this study. The focus was on children's language use while engaged in pair and group work in English language classes. Comparisons were made with language use during peer work in content area classes (e.g. Maths, PE). Specifically, the objectives for this project were to:

- describe the use of pair/group work in EL and content area courses at P1 and P3, determine when peer work was used in lessons (within the sequence of activities), how it was used (type of activities), and why (purposes);
- examine the type of language used in peer work and how this could lead to or subtract from language learning opportunities;
- develop recommendations for improving use of peer work in order to foster language learning, develop the pragmatic/social skills needed for effective collaboration, and build a foundation for interdisciplinary project work in upper primary.

These objectives address crucial concerns of teachers about the role of peer work in Singapore's English language classes. Specifically, teachers have expressed concern about the use of codeswitching between Mother Tongue (MT) and English, the use of so-called 'Singlish' (Singapore Colloquial English or SCE), and the impact of communicative group activities on language development (positive or negative). They have also expressed concerns about logistical issues surrounding peer work, especially with 30-40 children in a primary school class. Therefore, this classroom-based study investigated how teachers were using peer work in their lessons, what they believed to be successful and what they felt was problematic. The study also investigated children's language use in both EL and content area courses (e.g. Mathematics, Physical Education, Music) to determine whether common peer group interaction patterns provided adequate opportunities for language learning. Content area (CA) classes as well as English classes were included in the study since all content courses other than Mother Tongue (Mandarin, Malay or Tamil) are taught in English in the Singapore context. Thus, these CA classes can also provide potential opportunities for language learning. Teachers' pedagogical concerns about pair and group work were addressed directly by examining pedagogy within the Singapore context and looking for ways to use pair/group work appropriately and effectively for language learning and the development of pragmatic/social skills which are realized through language.

The overall purpose of the project was interventionist with a goal of encouraging teachers to try new ways of implementing peer work in their lessons. The intervention was collaborative in nature, incorporating teachers' classroom expertise as well as referencing current research on language learning.

A two-stage research/intervention design was implemented. Stage 1 was a one-month descriptive stage including classroom observations and interviews; Stage 2 was a one-year intervention including observations, interviews, planning meetings and materials development.

Research Background

The proposed project is based on prior research in several key areas:

- the use and development of collaborative learning through pair/group work and the language needed to accomplish collaboration;
- peer interactions and language learning, including code-switching among bi/multilinguals and language awareness as a means of fostering language learning and appropriate language use;
- the need for appropriate language in CA courses and the ways in which CA courses can provide opportunities for language learning.

Each of these will be discussed briefly in this section.

In the domain of cooperative learning, peer interactions are considered to be beneficial for cognitive, social and emotional development (e.g. Barnes, 1992; Kagan, 1992; Johnson, Johnson & Holubec, 2002). For literacy development, some cooperative learning strategies encourage student participation in group discussions, thereby enhancing reading and writing lessons whether in a first or second language (e.g. Fisher & Frey, 2007; Knipper & Duggan, 2006; McCormack, 1997; Raphael, Brock & Wallack, 1997). However, for communicatively-based second language teaching, peer interactions are central (e.g. Ellis, 1984; Gaies, 1985; Jacobs & Ball, 1996; Jacobs & Goh, 2007; Nunan, 1989). Peer interactions can offer numerous opportunities for learners to obtain comprehensible input, produce output (Swain & Lapkin, 1998), and participate in negotiation for meaning (Pica, et al., 1996).

Interaction and negotiation for meaning are considered to be important for language acquisition because they provide a context for the integration of input, output, feedback and attention to form (Gass, 2003; Long, 1996). Teacher-fronted activities can provide interaction and negotiation for meaning (Pica & Doughty, 1985; Doughty & Pica, 1986) but not all learners are engaged in these interactions and at least one study had found that being actively engaged in interaction is more beneficial than observing interaction (Mackey, 1999). Peer activities can also provide opportunities for interaction and negotiation for meaning (Doughty & Pica, 1986) and more learners can be actively engaged when peer activities are integrated into classroom instructions.

Although not all studies have found gains for conversational interaction and negotiation for meaning (Sato, 1986; Ellis & Heimbach, 1997), evidence of development in morphosyntax (Mackey, 1999; Silver, 2000), reading comprehension (Van den Branden, 2000) and vocabulary (Ellis, Tanaka, & Yamazaki, 1994; Van den Branden, 1997) has been found for interaction and negotiation for meaning with L2 learners. Activities which foster negotiation for meaning are compatible with communicatively-based language pedagogies as they emphasize meaningful language use. Various interactional moves are used in negotiation for meaning including clarification requests, comprehension checks, and recasts (Pica, et al., 1996). These features are common in interactions with both first and second language learning (Long, 1983), adults and children (Mackey & Oliver, 2002; Mackey, Oliver & Leeman, 2003; Mackey & Silver, 2005) and may be crucial to second language development (Long, 1996; Pica, 1994).
Content-based language learning can also offer opportunities for communicative language learning. It has been proposed as a way of helping language minority students cope with academic content while developing language skills (e.g. Richard-Amato &

Snow, 1992; Snow & Brinton, 1997). Various models of content-based language learning and possible means of implementation have been suggested (e.g. Brinton, Snow, & Wesche, 1989; Cantoni-Harvey, 1987; Mohan, 1986; Murphy & Stoller, 2001; Pally, 2000; Numrich, 2001). Singapore's bilingual education system, which makes use of English for teaching CA classes from the first year of primary onwards, can be considered a content-based language learning context for those children who do not use English at home even when the main purpose of the course is not language learning. Although the Singapore system differs in some ways from other models of immersion education (see Johnson & Swain, 1997, for an overview of other models), it constitutes a type of content-based, immersion education for those children who enter primary school with limited English.

One common feature of bi/multilingual interactions is the use of codeswitching as a device to communicate not only meanings but also relationships and identities (e.g. Blom & Gumperz, 1972; Gal, 1979; Rubin, 1968). On the one hand, codeswitching might help children to establish group identity and peer relationships; on the other hand, if codeswitching is used extensively, it could subvert pedagogical aims for acquisition of the target language. Teachers in the Singapore context report anecdotally that their students prefer to use Mother Tongue,[1] that codeswitching is common, and that students frequently make use of 'Singlish' rather than so-called 'Standard English' even in classroom contexts. These issues – use of peer work for cooperative learning and for language learning, conversational interaction and negotiation for meaning, codeswitching and Singlish use – are important for language teachers in Singapore. In particular, it is useful to know how peer work and language use in peer work plays out in a context which is not parallel to the ESL context of the 'Centre' (Phillipson, 1992) and in which communicative language teaching may be reinterpreted or de-emphasized (Silver, Goh, & Alsagoff, forthcoming; Vaish & Shegar, forthcoming).

Methodology

Data sources for this study included classroom observations and recordings, interviews with teachers and students, and teacher questionnaires at the beginning and end of the study. The data collection for Stages 1 and 2 were similar but not identical as explained below.

Data Collection

Data collection included classroom observation and coding using a coding instrument developed for this study (Silver & Kogut, v1, n.d.),2 classroom audiotaping and videotaping, teacher and student interviews. Data on teacher background (educational background, language spoken at home, etc.) was also collected with a brief questionnaire (Appendix A). In Stage 1 of the study, the descriptive stage, five classroom teachers were observed teaching according to their normal procedures. Teachers proposed their own observation schedule according to their timetable during the observation period. Although they knew that the project was related to peer work, there was no pressure to invite the researchers to observe lessons with peer work. In Stage 2, the intervention stage, teachers were encouraged to incorporate more peer work into their lessons, to try new activity types for peer work, and to re-think their ways of using peer work in EL lessons. Although teachers had a say in when observations would be done, there was an attempt to observe each teacher at least once per month and to observe lessons which included peer work.

The initial research plan was to have two teachers from Stage 1 continue into Stage 2: one at P1 and one at P3. However, the P1 teachers were subsequently engaged in implementing SEED[3] in their school and felt they could not participate in the research project at the same time as their SEED development. One of the P3 teachers moved to a different school before the intervention began and thus was not included in Stage 2. The

other two teachers continued in Stage 2; however, one of them was moved from a P3 class to a P2 class. Two other P3 teachers, new to the project, were invited to join the project by one of the participating teachers. Therefore, Stage 2 had four participating teachers and their students, one class at P2 and three classes at P3. This included all of the P3 classes for this school in this year.

For P3, students were 'banded' by their grades from the previous year. Based on this banding, the teachers' characterised the P3 classes as 'high ability' (1 class) and 'mixed ability' (2 classes). Although two of the classes were considered to be 'mixed ability', there was a perception among the P3 teachers that one of the classes was somewhat lower in English and academic proficiency than the other. The P2 class was a mixed ability class.

Data collection for Stage 2, similar to Stage 1, included classroom observations and recordings in EL and CA classes, teacher and student interviews, and teacher background survey information. However, observations and interviews for Stage 2 were more extensive; interviews and reflection sessions followed observations with video-viewing for teacher comments. In Stage 2, each teacher was observed and recorded approximately once per month in the period Feb – July, working around revision, examination and vacation times. These lessons were also coded with the classroom coding scheme. Other observations were in-person observations by the intervention planner, a teacher educator known to the teachers and Principal Investigator of the project. Field notes were taken for the in-person observations but those lessons were not recorded or coded with the classroom coding scheme. The main purpose of the recorded observations was to collect data on a continuing basis. On the other hand, the in-person observations were intended to be more interventionist in nature with the intervention planner suggesting possible activities and materials before the lesson, then observing the lesson as taught, and subsequently meeting the teacher to discuss her thoughts about the lesson, the activities and the materials. The intervention planner also met with the teachers at other times, individually to view the videotaped lessons and read transcripts of the lessons (at least once in two months) or as a group in a workshop setting (three times during the year: beginning, semester break and end of the year).

For the two teachers who had not participated in Stage 1, two observations were done at the beginning of the academic year to obtain descriptive information on their usual teaching practices. These were considered to be 'Stage 1 observations' for these teachers. A summary of lessons observed, recorded and coded with the classroom coding scheme can be found in Appendix B.

Data Analysis

Data analysis included investigation of the participation patterns used in lessons and types of activities used during peer work participation patterns, following the classroom coding scheme (Silver & Kogut, n.d.). Student language use was investigated by annotating transcribed conversations for negotiation for meaning, use of languages other than English, and use of 'Singlish' with MMAX2 software (EML Research gGmbH, 2005) and annotation schemes and a query tool prepared for this project by the CRPP SCoRE team[4]. Details of these analyses are explained elsewhere (Silver, 2007a, 2007b, 2007c, 2007d). Brief summaries are provided here.

Participation Patterns

The coding of participation patterns (PPs) included identifying which PPs were used in each lesson. Data on PPs was compiled to identify the most frequent PPs for each grade level, subject, and teacher. Options for PPs were

Whole class teacher fronted: the students work as a whole class and the teacher leads the process.
Whole class student fronted: the students work as a whole class and one or more students lead the process. The student or students have 'the floor' in the sense that the whole class is supposed to be paying attention to the student(s).
Individual public: the students work individually on a public space in the class (e.g. doing assignments near the whiteboard, putting up posters for everyone to view). This might also include working at their desks when teacher and student behaviour indicates that public sharing of the work is accepted.
Individual private: the students work individually at their seats.
Large group work: the students wsork in groups of 6 or more people. Usually this follows the teacher saying the students are to work in groups or that they 'can'; visually the children are observed to be sitting together as groups.
Small group work: the students work in groups of less than 6 people. Usually this follows the teacher saying the students are to work in groups or that they 'can'; visually the children are observed to be sitting together as groups.
Pair work: students work in pairs. Usually this follows the teacher saying the students are to work in pairs or that they 'can'; visually the children are observed to be sitting together as pairs.
Free movement: the students are free to move around the class while doing the tasks or may need to move around the class (e.g. learning centers)
Other: if the participation pattern does not seem to fit any of the descriptions above, it can be coded as 'other' with a brief exaplanation.

The step of the analysis was to identify the most frequent PP types for each grade level, subject, and teacher. Comparisons were made for these variables.

Activity Types

The most common activities used in class were also identified. The original activity list followed Silver & Kogut, v1 (Dec 2005) which was based on prior research done in EL classes at P4 (Silver & Skuja-Steele, 2005). Subsequently, the list of activities was revised to include common activities which were initially categorized as 'Other' (e.g. hands-on arts and crafts projects) and to clarify potential misunderstandings (e.g. changing 'problem-solving' to 'decision making' since the use of 'problem solving' during Maths lessons was confusing to coders). The full list of activities is explained in Silver and Kogut (n.d.). For the analysis in this report, a subset of 19 lessons was coded for peer work activity.

Negotiation for Meaning

Analysis of negotiation for meaning was a crucial part of the study as it related directly to the type of language used in the classroom and how that language use could lead to learning opportunities for studnets. Therefore, transcripts of the lesson were annotated for conversational sequences with the typical pattern 'Initiating Utterance – Signal – Response' as shown in Example 1.

Example 1

	Speaker	To		Coding
1	C1	Group	Aey, how to paste? I've got no glue ...	
2	C2	C1	Not paste!	
3	C1	C2	Then?	
4	C2	C1	You should shade!	← Initiating utterance
5	C1	C2	Shade?	← Signal
6	C7	C1	I teach you one way ...	← Response

In turn 1, Child 1 (C1) asks a question but this does not seem to indicate misunderstanding of someone's preceding message; instead, it seems to be related to specific procedures or trouble with a glue stick she is using. In contrast, in turn 5, Child 1 repeats a word used by Child 2, using rising intonation, "Shade?" This is taken as a signal of lack of understanding. Thus, turns 1-3 do not comprise a negotiation sequence but turns 4-6 do. The latter also fit the pattern of initiating utterance – signal – response, the standard three parts of a negotiation sequence.

Subsequently, interactional moves within the negotiation sequences were analyzed. For this study, only clarification requests, confirmation checks, and reformulations were identified. Briefly, *clarification requests* use questions or statements to indicate that clarification of the previous utterance is needed. Examples from the data include:

1. Huh?
2. Sorry?
3. She didn't bring which one?
4. What does that mean ah?
5. What do you mean by flat?

Confirmation checks are variations of the form "Did you say _____?" These include questions or statements with repetition or partial repetition of the previous utterance. For example,

C1 Who have yellow highlighter?
C2 Yellow highlighter? Yellow highlighter?[5] Did you say yellow highlighter?

In this case, C1 and C2 were working on a poster together, sharing materials; C2's turn is comprised of confirmation checks

Reformulations (or recasts) are restatements of the previous utterance which maintain the same meaning but vary in syntactic structure or lexical choice. Reformulations may or may not be lexically and grammatically accurate, for example:

Teacher	Class	10? Commuters?
C1	Teacher	Computer ah?
C2	C1	Oh commuter.

C1 Anyone have yellow highlighter?
C2 Who have yellow highlighter?

Use of Languages Other than English and Uses of Singlish

Uses of languages other than English and uses of Singlish were identified and tabulated by utterance using the software designed for this project. For this report, uses of languages other than English were simply annotated as 'non-English' and counted. Uses of Singlish were identified in a subset of six peer transcripts and annotated for 10 features: unspecified subject, unspecified object, use of the verb 'got' without 'have', word order, use of pragmatic particles (e.g. lah), formulaic tag question (is it?), SCE questions (How to …), unstated copula, unstated 'do' auxiliary verb, unconjugated main verb. These features are well-attested in the literature on Singapore English and therefore were used for this study (e.g. Alsagoff & Ho, 1998; Alsagoff, 2001; Gupta, 1992, 1994; Platt & Weber, 1980). This was not intended to be an exhaustive analysis of Singlish; instead, only indicative features were used to provide some basis for responding to teachers' concerns about the type of English used during peer work.

Findings and Discussion

A total of 62 lessons were observed, including unrecorded observations by the intervention planner.[6] Of these, 55 lessons were observed, recorded and coded. (See Appendix B for details). Of the 55 lessons which were recorded and coded, 30 were conducted during Stage 1 (Descriptive) and 25 were conducted during Stage 2 (Intervention) (Table 1). EL lessons comprised 54.5% of the total (Table 2). All of the findings presented here are based on the observations where were recorded and coded.

Table 1. Lessons observed by Stage

Stage	Frequency	Percent
Descriptive	30	54.5
Intervention	25	45.5
Total	55	100.0

Table 2. Lessons observed by subject types

Subjects	Frequency	Percent
EL	30	54.5
Mathematics	16	29.1
Science	5	9.1
PE	2	3.6
Social Studies	1	1.8
Music	1	1.8
Total	55	100.0

Out of the 30 Stage 1 (Descriptive) lessons, 47% were English lessons, 33% were Mathematics lessons, the rest were Science (3), PE (2) and Music (1) lessons. For the Stage 2 (Intervention) lessons, 64% were English lessons, 24% were Mathematics lessons, the rest were Science and Social Studies (Table 3).

Lessons by seven teachers were documened in Stage 1. Each teacher was observed and recorded for 1-7 lessons. In Stage 2, 4 teachers were observed and recorded for 6-7 lessons each. The number of recorded observations by teacher and stages is given in Table 4.

Table 3. Frequency of lessons by subjects

	Stage 1 descriptive		Stage 2 intervention	
Subject	Frequency	Percent	Frequency	Percent
EL	14	46.7	16	64
Mathematics	10	33.3	6	24
Science	3	10	2	8
PE	2	6.7	0	0
SS	0	0	1	4
Music	1	3.3	0	0
Total	30	100	25	100

Table 4. Lessons per teacher in Stage 1 and Stage 2

	Stage 1		Stage 2	
Teacher	Frequency	Percent	Frequency	Percent
Teacher 1 (T1)	5	16.7	6	24.0
Teacher 2 (T2)	7	23.3	6	24.0
Teacher 3 (T3)	4	13.3	0	0
Teacher 4 (T4)	6	20.0	0	0
Teacher 5 (T5)	5	16.7	0	0
Teacher 6 (T6)	2	6.7	6	24.0
Teacher 7 (T7)	1	3.3	7	28.0
Total	30	100.0	25	100.0

Use of Peer Work

Results for Stage 1 (Descriptive) and Stage 2 (Intervention) are given below. In order to interpret the results, it is important to bear in mind the aims and methodology of the study. During Stage 1, no effort was made to influence the lessons, materials or PPs in any way. Observations were scheduled at the convenience of the teachers within a one-month period near the end of the school year. In Stage 2, on the other hand, materials and activities were suggested along with explicit recommendations to use peer work to implement those materials and activities. Observations of Stage 2 lessons were done regularly (at least 1 per month over the course of one year) and these observations were usually of lessons in which the teachers did try to incorporate peer work. Thus, it is not surprising that there was more peer work in the lessons observed in Stage 2, as reported below. In addition, the study was interventionist but not experimental in design. For this reason, descriptive statistics are reported.

Stage 1
The PPs in the observed lessons were categorized into eight types. These were Whole Class Teacher Fronted (WCTF), Whole Class Student Fronted (WCSF), Individual Public, Individual Private, Large Group Work, Small Group Work, Pair Work and Free Movement. For all lessons observed, a total of 528 PP types were recorded. It was found that 79% of the 528 PP types recorded were dominated by WCTF. Peer work (pair, small group, large group) and Individual Private (seatwork) were relatively infrequent at 7.4%. Other PP types were used even less frequently (Table 5).

Table 5. Frequency of participation pattern types

Participation pattern type	Frequency	Percent
WCTF	419	79.4
Individual private	39	7.4
Small group	23	4.4
WCSF	16	3.0
Individual public	11	2.1
Large group	10	1.9
Pair work	6	1.1
Free movement	4	1
Total	528	100.0
Peer work total	39	7.4

All of the teachers observed used WCTF as the most frequent PP in their lessons (Table 6) regardless of grade level (Table 7) or subject (Table 8). At the P2 and P3 levels, the second most frequent PP type used in lessons was Individual Private (seatwork). This was not the case at the P1 level where WCSF and Individual Public were second most frequent. Even when pair, small group and large group work are combined for a peer work total, results show that other PPs tended to be more common except in P3 when peer work was slightly more common than Individual Private (Table 7). Individual Private (seatwork) was also second most frequent across all subjects except PE where Large Group Work was second most frequent. Social Studies and Music used WCTF for the entire lesson (Table 8).

When comparing English and CA lessons, the most frequent PP type used were WCTF followed by Individual Private. However, there seemed to be apreference for small group work in EL and large group work in CA, most likely influenced by the extensive use of large group work for games in PE (a CA subject). There was also a tendency to use more WCSF (e.g. student presentations) in EL as compared with Individual Public in CA. When totals for peer work PPs are combined, the total use of peer work is slightly higher than that of Individual Private in EL lessons but somewhat lower in CA classes (Table 9).

WCTF was also the most frequent whether considering lessons in Stage 1 or Stage 2 (Table 10). Within Stage 1, there was some variation in the second most frequently used PP by teacher (Table 11) and by grade level (Table 12). Individual Private, WCSF and Individual Public tended to be more common than pair work, small group work or large group work although Teacher 3 (T3) and Teacher 7 (T7) tended to be exceptions. In the case of T7 in Stage 1, all PPs were WCTF except two PPs of pair work. T3 however used more peer work than the other teachers in Stage 1 with a variety of PP types. When looking across grade levels, these exceptions are less apparent and even when a combined total for peer work is considered, we find these PPs to be used less frequently than others (Table 12). WCTF was also most common when considering the data by subject (Tables 13 and 14).

To sum up: in Stage 1, WCTF PPs were by far the most dominant. Individual Private, and Individual Public PPs were quite common as well. Peer work PPs were much less frequent although when taken together (pair, small group and large group counted together), their use is more evident.There was some variation by teacher, grade level and subject but these variations do not contradict the dominance of the WCTF pattern.

Table 6. Frequency of PP types used by teacher

PP type	Teacher														Total	
	T1	%	T2	%	T3	%	T4	%	T5	%	T6	%	T7	%		%
WCTF	72	83.7	106	82.8	29	69.1	38	80.9	47	81.0	71	79.8	56	71.8	419	79.4
Individual private	9	10.5	16	12.5	2	4.8	1	2.1	1	1.7	3	3.4	7	9.0	39	7.4
Small group work	1	1.2	3	2.3	3	7.1	0	0	2	3.4	7	7.9	7	9.0	23	4.4
WCSF	1	1.2	0	0	1	2.4	3	6.4	3	5.2	5	5.6	3	3.8	16	3.0
Individual public	0	0	1	0.8	3	7.1	3	6.4	3	5.2	1	1.1	0	0	11	2.1
Large group work	2	2.4	0	0	4	9.5	1	2.1	0	0	0	0	3	3.8	10	1.9
Pair work	0	0	2	1.6	0	0	0	0	2	3.4	2	2.2	2	2.6	6	1.1
Free movement	1	1.2	0	0	0	0	1	2.1	0	0	0	0	0	0	4	0.8
Total	86	100	128	100	42	100	47	100	58	100	89	100	78	100	528	100.0
Peer work total	3	3.6	5	3.9	7	16.6	1	2.1	4	6.8	9	10.1	12	15.4	39	7.4

Table 7. Frequency of PP types used by grade levels

PP type used	Grade level						Total	
	P1	%	P2	%	P3	%	Freq	%
WCTF	92	82.1	67	84.8	260	77.1	419	79.4
Individual private	2	1.8	7	8.9	30	8.9	39	7.4
Small group work	2	1.8	2	2.5	19	5.6	23	4.4
WCSF	6	5.4	0	0	10	3	16	3
Individual public	6	5.4	1	1.3	4	1.2	11	2.1
Large group work	1	0.9	0	0	9	2.7	10	1.9
Pair work	0	0	2	2.5	4	1.2	6	1.1
Free movement	3	2.7	0	0	1	0.3	4	0.8
Total	112	100	79	100	337	100	528	100
Peer work total	3	2.7	4	5	32	9.5	39	7.4

Table 8. Frequency of PP types used by subject

PP type used	Subject												Total	
	EL	%	Math	%	Sc	%	PE	%	SS	%	Music	%		%
WCTF	236	79.5	136	79.5	29	76.3	10	71.4	1	100	7	100	419	79.4
Individual private	21	7.1	14	8.2	4	10.5	0	0	0	0	0	0	39	7.4
Small group work	17	5.7	5	2.9	1	2.6	0	0	0	0	0	0	23	4.4
WCSF	12	4.0	4	2.3	0	0	0	0	0	0	0	0	16	3.0
Individual public	4	1.3	7	4.1	0	0	0	0	0	0	0	0	11	2.1
Large group work	2	0.7	1	0.6	3	7.9	4	28.6	0	0	0	0	10	1.9
Pair work	5	1.7	1	0.6	0	0	0	0	0	0	0	0	6	1.1
Free movement	0	0	3	1.8	1	2.6	0	0	0	0	0	0	4	0.8
Total	297	100	171	100	38	100	14	100	1	100	7	100	528	100
Peer work total	24	8.1	7	4.1	4	10.5	4	28.6	0	0	0	0	39	7.4

Table 9. Frequency of PP types used by EL and CA

PP type used					Total	
	EL	%	Non EL	%	Freq	%
WCTF	236	79.5	183	79.2	419	79.4
Individual private	21	7.1	18	7.8	39	7.4
Small group work	17	5.7	6	2.6	23	4.4
WCSF	12	4	4	1.7	16	3
Individual public	4	1.3	7	3	11	2.1
Large group work	2	0.7	8	3.5	10	1.9
Pair work	5	1.7	1	0.4	6	1.1
Free movement	0	0	4	1.7	4	0.8
Total	297	100	231	100	528	100
Peer work total	24	8.1	15	6.5	39	7.4

Table 10. Frequency of PP types used by Stage

PP Type Used	Stage				Total	
	Descriptive	%	Intervention	%	Freq	%
WCTF	214	79.8	205	78.8	419	79.4
Individual private	17	6.3	22	8.5	39	7.4
Small group	9	3.4	14	5.4	23	4.4
WCSF	9	3.4	7	2.7	16	3.0
Individual public	9	3.4	2	0.8	11	2.1
Large group	5	1.9	5	1.9	10	1.9
Pair work	2	0.7	4	1.5	6	1.1
Free movement	3	1.1	1	0.4	4	0.8
Total	268	100	260	100	528	100
Peer work total	16	6	23	8.8	39	7.4

Table 11. Frequency of PP types used by Teacher for Stage 1

PP type used	Teacher identifier														Total	
	T1	%	T2	%	T3	%	T4	%	T5	%	T6	%	T7	%		%
WCTF	34	85	39	79.5	29	69	38	80.9	47	81.1	13	81.3	14	87.5	214	79.8
Individual private	4	10	9	18.4	2	4.8	1	2.1	1	1.7	0	0	0	0	17	6.3
Small group	1	2.5	1	11.1	3	7.1	0	0	2	3.4	2	12.5	0	0	9	3.4
WCSF	1	2.5	0	0	1	2.4	3	6.4	3	5.2	1	6.3	0	0	9	3.4
Individual public	0	0	0	0	3	7.1	3	6.4	3	5.2	0	0	0	0	9	3.4
Large group	0	0	0	0	4	9.6	1	2.1	0	0	0	0	0	0	5	1.9
Pair work	0	0	0	0	0	0	0	0	0	0	0	0	2	12.5	2	0.7
Free movement	0	0	0	0	0	0	1	2.1	2	3.4	0	0	0	0	3	1.1
Total	40	100	49	100	42	100	47	100	58	100	16	100	16	0	268	100
Peer work Total	1	2.5	1	11.1	7	16.7	1	2.1	2	3.4	2	12.5	2	12.5	16	6

Table 12. Frequency of PP types used by grade level for Stage 1

PP type used	Grade level				Total	
	P1	%	P3	%	Freq	%
WCTF	92	82.1	122	78.2	214	79.8
Individual private	2	1.8	15	9.6	17	6.3
Small group	2	1.8	7	4.5	9	3.4
WCSF	6	5.4	3	1.9	9	3.4
Individual public	6	5.4	3	1.9	9	3.4
Large group	1	0.9	4	2.6	5	1.9
Pair work	0	0	2	1.3	2	0.7
Free movement	3	2.7	0	0	3	1.1
Total	112	100	156	100	268	100
Peer work total	3	2.7	13	8.4	16	6

Table 13. Frequency of PP types used by subjects for Stage 1

PP type used	Subject										Total	
	EL	%	Math	%	Sc	%	PE	%	Musi c	%	Freq	%
WCTF	108	81.2	71	76.3	18	85.7	10	71.4	7	100	214	79.9
Individual private	9	6.8	6	6.5	2	9.5	0	0	0	0	17	6.3
Small group	6	4.5	2	2.2	1	4.8	0	0	0	0	9	3.4
WCSF	5	3.8	4	4.3	0	0	0	0	0	0	9	3.4
Individual public	3	2.3	6	6.5	0	0	0	0	0	0	9	3.4
Large group	0	0	1	1.1	0	0	4	28.6	0	0	5	1.9
Pair work	2	1.5	0	0	0	0	0	0	0	0	2	0.7
Free movement	0	0	3	3.2	0	0	0	0	0	0	3	1.1
Total	133	100	93	100	21	100	14	100	7	100	268	100
Peer work total	8	6	3	3.3	1	4.8	4	28.6	0	0	16	6

Table 14. Frequency of PP types used by EL and CA for Stage 1

PP type used	EL_nonEL				Total	
	EL	%	Non EL	%	Freq	%
WCTF	108	81.2	106	78.5	214	79.9
Individual private	9	6.8	8	5.9	17	6.3
Small group	6	4.5	3	2.2	9	3.4
WCSF	5	3.8	4	3	9	3.4
Individual public	3	2.3	6	4.4	9	3.4
Free movement	0	0	3	2.2	3	1.9
Large group	0	0	5	3.7	5	1.1
Pair work	2	1.5	0	0	2	0.7
Total	133	100	135	100	268	100
Peer work total	8	6	8	5.9	16	5.2

Stage 2
In Stage 2, only P2 and P3 classes were observed. P1 was not included because the teachers in P1 were engaged in implementing SEED, an initiative from MOE which encouraged school-based curriculum design.[7] In Stage 2, all observed teacheres used WCTF more frequently than any other PP; however there were individual differences. BothT6 and T7 used more peer work than Individual Private and all of the teachers except T1 used more types of peer work PPs than they had in Stage 1. (See Appendix C for details.)

Table 15. Frequency of PP types by grade level for Stage 2

PP type used	Grade level				Total	
	P2	%	P3	%	Freq	%
WCTF	67	84.8	138	76.2	205	78.8
Individual private	7	8.9	15	8.3	22	8.5
Small group	2	2.5	12	6.6	14	5.4
WCSF	0	0.0	7	3.9	7	2.7
Large group	0	0.0	5	2.8	5	1.9
Pair work	2	2.5	2	1.1	4	1.5
Individual public	1	1.3	1	0.6	2	0.8
Free movement	0	0	1	0.6	1	0.4
Total	79	100	181	100	260	100
Peer work total	4	5	19	10.5	23	8.8

There were few differences in PP type by subject and when comparing EL with CA lessons, the PP type that was most frequent was WCTF (aacross subjects and throughout Stage 1 and Stage 2). However, peer work overall was used somewhat more frequently in EL than in non-EL subjects during Stage 2 (Table 17). Comparing between Stage 1 and Stage 2, peer work was observed in about 12% of PP types used in Stage 1 lessons and about 17% of Stage 2 lessons (Table 18).

Table 16. Frequency of PP types by subjects for Stage 2

PP Type Used	Subject								Total	
	EL	%	Math	%	SC	%	SS	%	Freq	%
WCTF	128	78.0	65	83.3	11	64.7	1	100	205	78.8
Individual private	12	7.3	8	10.3	2	11.8	0	0	22	8.5
Small group	11	6.7	3	3.8	0	0	0	0	14	5.4
WCSF	7	4.3	0	0	0	0	0	0	7	2.7
Large group	2	1.2	0	0	3	17.6	0	0	5	1.9
Pair work	3	1.8	1	1.3	0	0	0	0	4	1.5
Individual public	1	0.6	1	1.3	0	0	0	0	2	0.8
Free movement	0	0	0	0	1	5.9	0	0	1	0.4
Total	164	100	78	100	17	100	1	100	260	100
Peer work total	16	9.7	4	5.1	3	17.6	0	0	23	8.8

Table 17. Frequency of PP types by EL and CA for Stage 2

PP type used	Subject type				Total	
	EL	%	Non EL	%	Freq	%
WCTF	128	78	77	80.2	205	78.8
Individual private	12	7.3	10	10.4	22	8.5
Small group work	11	6.7	3	3.1	14	5.4
WCSF	7	4.3	0	0	7	2.7
Large group work	2	1.2	3	3.1	5	1.9
Pair work	3	1.8	1	1	4	1.5
Individual public	1	0.6	1	1	2	0.8
Free movement	0	0	1	1	1	0.4
Total	164	100	96	100	260	100
Peer work total	16	9.7	7	7.2	23	8.8

Table 18. Frequency of PP types used by EL and CA by Stage

PP type used	Stage 1				Stage 2			
	EL	%	Non EL	%	EL	%	Non EL	%
WCTF	108	81.2	106	78.5	128	78.0	77	80.2
Individual private	9	6.8	8	5.9	12	7.3	10	10.4
Small group	6	4.5	3	2.2	11	6.7	3	3.1
WCSF	5	3.8	4	3.0	7	4.3	0	0
Individual public	3	2.3	6	4.4	2	1.2	3	3.1
Free movement	0	0.0	3	2.2	3	1.8	1	1.0
Large group	0	0.0	5	3.7	1	0.6	1	1.0
Pair work	2	1.5	0	0	0	0	1	1.0
Total	133	100	135	100	164	100	96	100
Peer work total	8	6.0	8	5.9	16	9.8	7	7.3

In sum, the dominant participation type used in observed lessons was still WCTF, followed by Individual Private. The findings are consistent for Stage 1 and Stage 2. This is typical of a lesson in the primary school where WCTF is used to deliver the lesson and to provide instructions to students. This was usually followed by students doing their own individual work and this pattern is observed regardless of subject, grade level, or stage of the project (Table 19). In general, then, even when peer work is used more extensively, WCTF PPs still dominate because teachers use WCTF to frame each activity and keep the lesson 'on track'. The data also suggest that teachers exploited opportunities to use peer work more frequently in Stage 2 than in Stage 1. This is attributed to the intervention which encouraged teachers to find opportunities to include peer work either through new activities and materials or through using the standard textbook materials in different ways.

Table 19. Frequency of PP types used by Grade Level

PP type used	Stage 1				Stage 2			
	P1	%	P3	%	P2	%	P3	%
WCTF	92	82.1	122	78.2	67	84.8	138	76.2
Individual private	2	1.8	15	9.6	7	8.9	15	8.3
Small group	2	1.8	7	4.5	2	2.5	12	6.6
WCSF	6	5.4	3	1.9	0	0.0	7	3.9
Individual public	6	5.4	3	1.9	0	0.0	5	2.8
Large group	1	0.9	4	2.6	2	2.5	2	1.1
Free movement	3	2.7	0	0	1	1.3	1	0.6
Pair work	0	0	2	1.3	0	0	1	0.6
Total	112	100	156	100	79	100	181	100
Peer work total	3	2.7	13	8.3	4	5.1	15	8.3

In addition, the results suggest that there was a higher percentage of peer work (large group work, small group work, pair work) done at P2 and P3 as compared to that at P1 (Table 20). Of course, data for P1 were collected during Stage 1 of the project, prior to the intervention. However, we might expect that teachers in P1 would use more peer work to engage young learners as they learn how to 'do school'. This was not the case in these observations. In fact in the observations for P1 (all during Stage 1 of the project), the second most frequent PP type used was WCSF and Individual Public at 5.4%. P1 teachers commented that classroom management and understanding instructions could be issues for more extensive use of peer work in P1: "They do love to talk to each other, and there is lot of noise …" and "Ah, that's where all the squabbles normally arise, because they don't listen and then, you know, they just want to do it their way." A final point with regard to P1: data for this study were collected before this school embarked on SEED and it may be that findings for P1 would be somewhat different now that SEED has been implemented.[8]

In all, a total of 528 PP types were observed. Only 7.4% (39) included some type of peer work (large group work, small group work and pair work). In terms of lesson structure, when peer work was used, the lesson pattern tended to be WCTF followed by individual private, followed by peer work, with peer work acting as the culminating activity. Alternatively some lessons began with WCTF participation followed by peer work and then WCSF (presentations) but this was relatively uncommon. The most frequent type of peer work used is Small Group Work which constitutes about 59%, 23 out of the 39 observed. This PP type seemed to be most frequently used by T6 and T7 at grade level P3. The second most frequent type of peer work used was Large Group Work where 40% of the total observed was used by T3 at grade P3. Comparing among teachers, T7 engaged students in peer work the most frequently (Table 20).

Table 20. Frequency of peer work used by teacher

		PP type used						Total	
Teacher	Grade level	Large group work	%	Small group work	%	Pair work	%	Peer work	%
T1	P3	2	20.0	1	4.3	0	0	3	7.7
	P2	0	0	2	8.7	2	33.3	4	10.2
T2	P3	0	0	1	4.3	0	0	1	2.6
T3	P3	4	40.0	3	13.0	0	0	7	17.9
T4	P1	1	10.0	0	0.0	0	0	1	2.6
T5	P1	0	0	2	8.7	0	0	2	5.1
T6	P3	0	0	7	30.4	2	33.3	9	23.1
T7	P3	3	30.0	7	30.4	2	33.3	12	30.8
Total		10	100	23	100	6	100	39	100

Common Activity Types

In Stage 1, common activities included discussion and sharing of ideas (types of pets they had and how to take care of them, movies they liked) as well as 'art projects' when students created various objects (e.g. puppets) and some decision-making activities (planning a brochure or poster together). All of these activities involved students working together with the same pool of information; there were no examples of information-gap activities in which interlocutors do not share all of the same information , thus creating an gap in shared information which students must address. There were no examples of this type of activity in the textbook and only two of the Stage 2 teachers had heard of 'jigsaw' tasks. All of the teachers said that they were unfamiliar with their use or purpose.

In Stage 2, an analysis of 19 lessons with peer work showed few 'sharing' activities, more 'art work' and 'decision making' tasks and three examples of information gap tasks (Table 21). The higher number of 'art work' task types was partially due to the topics in the textbook during Stage 2 – topics which emphasised, for example, creating an artefact and then writing a procedural text about how the artefact was made. The use of decision-making tasks was similarly related to textbook topics. In particular, when students were learning about information reports, they spent time in groups deciding about information to include and how to format the texts they would create (e.g. designing an information pamphlet). Information-gap tasks, on the other hand, were only used when suggested by the innovation planner. In discussing information-gap task with the teachers prior to implementation, the teachers expressed reservations about classroom management. However, after lessons using information gap activities, the teachers all reported that the activities had gone surprisingly well with the students highly engaged and no classroom management problems. However, they still had reservations about materials development: due to time constraints, the teachers felt they could not use these activities unless resources were provided.

Table 21. Common peer work task types, Stage 2

Task types	Frequency	Percent
Art project	7	36.84
Decision making	7	36.84
Information gap	3	15.79
Sharing	1	5.26
Game	1	5.26
Total	19	100

Although there was peer work as a lead up to writing (e.g. planning informational pamphlets), peer work activities typically used little writing. There was a tendency for the observed lessons to focus more on oral skills than written skills. This may have been because the teachers felt that peer work was most useful for oral language development rather than writing. In addition, the teachers said that students at this level needed teacher support for their writing and that writing activities were quite time consuming. Therefore, they preferred to avoid writing in peer tasks. In a few lessons observed by the innovation planner, students were asked to do a small amount of writing as part of the peer work. These activities did tend to take longer than oral activities done with peers and often the amount of time needed was longer than the teacher had anticipated. They also required a significant amount of scaffolding on the part of the teacher.[9]

Language Use in Peer Work

The students overwhelmingly used English in their classroom interactions, including their peer work interactions. Use of Mother Tongue was limited in quantity and also seemed to be limited in terms of function, indicating developing student awareness of different dimensions of appropriate language use. During peer work, students sometimes, but not always, corrected each other's misunderstandings and provided feedback on incorrect usage. Students negotiated for meaning with their peers and teachers by using clarification requests, repetitions and reformulations. However, use of negotiation for meaning, extended speech, and complex grammar may have been limited by the types of tasks that were commonly used for peer activities. Details are given in this section.

Use of English

Despite teacher fears, students in this school in these classes used English as the dominant language of their peer interactions.

As shown in Table 22, out of 58 transcripts of peer work, the average use of languages other than English per peer activity was only 10.21 utterances. There was considerable variation across all lessons and EL lessons had the greatest variation in use of languages other than English. When another language was used, it was almost always Chinese.

Table 22. Use of languages other than English

	All	EL	CA
No of transcripts	58	33	25
Total utterances with code-switching	592	384	208
Average	10.21	11.64	8.32
Mode	1	1	5
Median	4	2	5
StDev	19.58	25.14	7.84

Although there was some use of Chinese during peer interactions, that use was minimal and almost always restricted to social talk such as joking, teasing and insulting. Similar findings were found in an earlier study of Singaporean children in lower primary engaged in peer activities (Silver, 2004). For example, students spoke in Chinese when talking about the recorders used as part of the research (Example 2) and when making requests of each other. But English was also used for these purposes and in these exchanges (Example 3).

*Example 2**

她**们给我的**, 我要穿啦, 她**给我穿的** (They give it to me. I need to wear it. She gives it to me to wear.)

*Example 3**
借我一个... (Lend me one...) Never mind ... good.
*In both examples, a translation into English is given in parenthesis. In Example 3, text in English which is not in parenthesis was spoken in English.
Languages other than English were almost never used to accomplish the assigned task or classroom work. With one teacher (P3) there were some instances when students used Chinese to call the teacher (Example 6). However, the conversation did not continue in Chinese and the teacher did not use Chinese to address the students in class.

Example 4
Teacher, 救命啊, 求求你啊 (Help! Please!)

Use of Singlish

The students in this study did use the localized variety of English during their peer interactions. A sub set of six peer transcripts were analyzed and compared with transcripts from mixed gender neighbourhood schools. The patterns of use were similar for this government-aided school and the comparison neighbourhood schools (Silver, 2007b). The most common features of Singlish use were unspecified subjects (i.e. the grammatical subject was not explicitly stated when it could be easily identified from the context), use of pragmatic particles, and unspecified object (Table 23). The use of unspecified subjects and objects could be related to the task types commonly used for peer work– when students share a high percentage of information, grammatical subjects and objects are easy to understand from the context. The prevalance of these task types then sets up a situation in which SCE is most likely to be used by students.

Table 23. Feature use as percentage of turns, GA schools

Features of Singlish	N	Min	Max	Mean	SD
Unspecified subject	9	2	4	30	6
Pragmatic particle	9	17	44	30	9
Unspecified object	9	8	3	20	7
Unspecified copula	9	1	26	16	6
Verb unconjugated	9	8	22	14	5
Unspecified do Support	9	0	12	8	4
Use of 'got'	9	1	12	6	4
SCE question tag	9	0	17	4	5
Word order	9	0	3	1	1
Universal question tag	9	0	4	1	1

It is also worth noting that there was considerable variety in how much Singlish was used from one conversation to the next. There was use of 'Standard English' grammar in all peer conversations.

Negotiation for Meaning

Of particular interest for language learning is whether students engaged in negotiation for meaning during their peer interactions. Based on accumulated research on the impact of conversational interaction and interactional adjustments, Long proposed that "…*negotiation for meaning*, and especially negotiation work that triggers *interactional*

adjustments by the NS or more competent interlocutors, facilitates acquisition because it connects input, internal learner capacities, particularly selective attention, and output in productive ways (1996: 451-452). Interactional adjustments include repetition, clarification requests, confirmation checks, comprehension checks, recasts, etc. (p. 481). Central to the arguments for including peer work in language classrooms is the possibility that peer work can offer more abundant opportunities for negotiation for meaning. Teachers can also provide opportunities for negotiation for meaning (Pica & Doughty, 1985). However, peers can also provide opportunities to negotiate for meaning especially when information-gap tasks are used (Doughty & Pica, 1986; Pica, Kang & Sauro, 2006).

Details of the analysis for negotiation for meaning are presented in Silver (2007a). In brief, the results for this study showed firstly, that teachers negotiated for meaning in their interactions with the students and, in fact, that negotiation for meaning was more common in teacher-led interactions than peer interactions. Howeer, there was also negotiation for meaning in peer interactions. It is worth noting that the findings of more negotiation for meaning in teacher-led activities than in peer activities seems to be a feature of this particular school setting. When results were compared with other primary school teachers, in other Singaporean schools at other grade levels, it was found that the teachers at this school, in this study, did engage in negotiation for meaning more than the norm (Silver, 2007b).

Prior research has suggested that the sort of decision-making and sharing tasks found to be common in this study are not the most effective for encouraging negotiation for meaning (Pica & Doughty, 1985; Doughty & Pica, 1986). Given the very small number of information-gap activities used for peer work, it is not possible to consider the possible impact of task type on negotiation for meaning in peer interactions.

Further examinatino of negotiation sequences showed that when students did negotiate for meaning, their negotiations often revolved around vocabulary. There were also occasions when the students focused on linguistic forms as part of their negotiations. For example, in a word matching activity, there were extended parts of the conversation in which the girls' considered the best matches for the word parts they had. In Example 7, they try to decide which word to match with 'lit' to make a compound noun.

Example 5

C1	Self	[Sunlit, moonlit] ... wind lit ... no ... (mumbling to herself)
C3	C4	[Just clip it there!] This one is lit.
C4	C3	What lit?
C3	C4	Moonlit.
C1	Group	Who says it must be rainwater? (referring to the previous compound word created)
C2	C3	Don't write this word, just now say already!
C4	C3	Then write this, then write this!
C3	C4	wind lit?
C4	Group	Aey, what lit hah?
C1	Group	Moonlit!
C3	Group	Rain ... er, rain, moon ... lit, [sun lit ...]
C1	Group	[Sun lit!]
C2	C1	What?
C3	C1	Are you sure it's sunlit?
C1	C3	Yes!
C3	Group	Ok, she said it's sunlit. Speak, speak, you must speak into it!
C6	C3	Aey, do you think it's moonlit?
C3	C6	Hah?
C6	C3	Do you think it's moonlit, ok?
C3	C6	I think it's moonlit, ok?

Later in the same conversation, as the girls were finishing up and checking their answers, they again questioned the use of 'lit' and reaffirmed their answer (Example 8).

Example 6

C2	C3	Which one, which one?
C1	C3	Sunshine is correct ...
C2	C3	Moonlit is correct.
C3	C2	Oh yah, moonlit is correct, how about this one?

Teacher Perceptions of Peer Work

As described above, teachers were largely unfamilar with peer task types that are considered to be beneficial for language learning (e.g. information gap tasks) and instead tended to think of peer work only in terms of 'cooperative' or 'collaborative learning. They were leery of the time needed to create materials for richer peer work because of the already heavy demands on their teaching schedules and they found that peer activiies which required writing offerend only limited value for the amoung of class time required.

In general, peer work was used to encourage students to practice skills or enact/apply what the teacher had 'taught', rather than a learning activity in its own right. This is in keeping with a system that tends to value accuracy in the final product over learning in a discovery process. For the most part, the teachers were uncomfortable with peer work in which students might explore language but not arrive at the 'correct answer'. Teachers included peer work in lessons because students thought it was fun and motivating. Teachers rarely, if ever, had language specific goals in mind for peer work whether in EL classes or other subjects. Instead, their rationales for use of peer work focussed on general educational principles of 'helping each other' and 'collaborating'.

One aspect of the intervention was to encourage teachers consider connections between peer work and language learning. Teachers were repeatedly ask to consider the type of language that would be needed in specific activities (e.g. what types of grammatical forms, what vocabulary words, what linguistic functions). Task materials were analyzed for linguistic features, visualization activivies were used to encourage teachers to imagine what peer sonversations might sound like, look like, or how they might unfold, and a chart asking teachers to anticipate what they expected students 'to do' and 'to say' was introduced. The teachers continued to find these activities to be difficult and confusing. At one point when faced yet again with anticipating the language necessary for a planned peer activity, a teacher lamented "I don't know what you want me to say!" Attempting to look for the specific linguistic omponents within an activity as well as thinking about how that activity fit in with the lesson overall, how the materials are to be used, etc.. requires both micro and macro level planning in conjunction with finely tuned language awareness (cf. Silver, 2007e) . Clearly these teachers were not accustomed to thinking about lesson activities in this way and they found it difficult to develop the expected language awareness within the time frame of the study.

Recommendations

A goal of this study was to develop recommendations for use of peer work which could foster language learning in Singapore primary classrooms. Several recommendations can be made based on classroom observations, teacher comments on the different activity types introduced in the intervention stage, and student responses.

Peer work can and should be used more frequently in EL classes—at least several times each week. In addition, there should be more variety in the types of tasks used for peer work and information-gap tasks should be introduced. (e.g. Pica, Kang & Sauro, 2006). Language learning games which encourage peer interaction should also be added to the

curriculum. Some activity types (e.g. ‘art projects’) take up a considerable amount of time but provide few opportunities to develop vocabulary, encourage accurate language use, or facilitate extended exchange or use of complex syntax. These activities could be more effective for language learning if there were a specific language learning component. For example, in addition to accomplishing the ‘art project’, the teacher might use this opportunity to work on specific linguistic forms implicitly, perhaps employing recasts as illustrated in Doughty and Varela (1998). Activities which require writing are quite time-consuming for lower primary students and are best left to lessons in which the development of writing is a goal. This does not mean that peer work cannot be used in reading, writing and grammar lesson. There is a tendency to think that peer work is best used to practice oral skills, partially because peer work is commonly seen as a ‘talk about it’ activity. However, if more variety in peer work types is introduced, peer work targeted at development in other skill areas can also be effective.

Asecond point is that teachers rarely, if ever, taught students how to work together. Instead, students were placed in groups and left to work out the socio-pragmatic aspects of peer work on their own. Additional support for the socio-pragmatic aspects of peer work could be added into lessons (e.g. assigning specific roles and teaching students to use those roles, teaching students to ask clarification questions and to paraphrase for each other, incorporating time for students to recap what they have learned in their group). This would enhance the peer work experience for students, help to meet the teachers’ goal of teaching student to work together, and provide a basis for richer language experiences through clarification and paraphrasing.

For P3, project work could be enhanced with more explicit teaching about the processes involved and with clear statements about learning objectives for activities on specific days. Although a goal of project work is to have students learn to work independently, scaffolding is needed at each step along the way, including scaffolding on the processes involved.

Conclusion

It is not possible to know if teachers during Stage 2 made use of peer work in lessons that were not observed; however, the increased use during observed lessons and the positive teacher comments about the activities, materials and use of peer work are encouraging.

During the intervention stage of the project, teachers made changes in the frequency and type of peer work used: more peer work was integrated into lesson, more variety in task types was seen, and information-gap activities were added in EL instruction. Activities which required writing while in the group were somewhat problematic at P2 and P3 levels as they were time-consuming. The exception was use of peer work for writing in lessons which targeted writing skills.

The intervention was successful in terms of increasing the quantity and type of peer work used. It was also useful in terms of helping teachers to think through their textbook activities and select activities which might or might not be useful as peer work. On the other hand, there was little evidence that the teachers re-thought the pedagogical or theoretical purposes for peer work and this would most likely make it difficult for the information on peer work and language learning to carry over to different class levels, different textbooks, or different subjects. Limited evidence from follow-up teacher interviews in 2007 seemed to support this. At that time, only teacher who continued to teach in P3 had continued to make use of ideas introduced in the intervention and this usually involved recyclying the materials and activities rather than continuing to advance their own thinking about how to use peer work effectively for language learning.

A key aim of the research was to find out whether teachers would integrate more peer work into their lessons when given suggested materials and activities. In brief: Yes. Another goal was to find out whether those materials and activities would be useful and feasible in the Singapore context. Again, yes. However, attempts to integrate more peer work also highlighted the need for the development of materials and resources that teachers could easily use to supplement their textbook or to replace textbook activities. One point that teachers made repeatedly was that they were able to add in more peer work in Stage 2 because the materials were provided for them. Thoughtful preparation of materials is time-consuming. However, once useful activities and accompanying materials are devised, these can be used repeatedly. Thus, collegial sharing of these resources is also important.

This study focused on pedagogical practices and language use in the classroom rather than student learning outcomes. An underlying question was whether teachers could adopt different pedagogical practices for peer work and whether they would perceive these changes to be beneficial for their students. Yes, and again yes. However, this study focussed only on classroom implementation, student outcomes in the Singaporean context has yet to be investigated. A study of student outcomes when peer work is integrated into EL lessons would be a logical follow up to this study.

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Notes

[1] Mother Tongue in the Singapore educational context refers to the national languages other than English studied in school: Mandarin, Malay and Tamil. This is determined by father's ethnicity and may or may not be the home language.

[2] Adapted from the Singapore Coding Scheme (SCS) (Luke, Freebody, Cazden, & Lin, 2004; Luke, Freebody, Lau & Gopinathan, 2005) with participation patterns adopted from the Labschool classroom coding system (Multimedia Adult Learner Corpus, n.d.; Reder,

S., Harris, K., & Setzler, K., 2003) and activities adopted from Silver & Skukja-Steel (2005).

[3] SEED is Strategies for Effective and Engaged Development, an initiative fostered by the Singapore Ministry of Education but designed and implemented by schools. Information can be found at http://www.moe.edu.sg/media/press/2005/pr20051229.htm.

[4] Information on the SCoRE project can be found at http://score.crpp.nie.edu.sg/score/. See also, Hong (2005); Sim, Hong & Kazi (2005).

[5] *Repetitions* can be partial or complete and can include both self and other repetitions. They often overlap with clarification requests and confirmation checks, as shown in the examples. Although they were coded in the data, they did not play a major part in the analysis for this study and are not discussed in this report.

[6] Those observations were intended mainly for discussion with teachers and therefore were not recorded or coded with the classroom coding scheme.
[7] Information on SEED and how it fits in with other initiative under 'Innovation & Enterprise' can be found at http://www.moe.gov.sg/about/yearbooks/2005/pdf/enrichment-and-engagement.pdf
[8] In an interview one of the P1 teachers noted that she expected P1 students to be engaged in more peer work after SEED was initiated because learning centres would be introduced (teacher interivew, 22.11.2004).
[9] An example of a P3 EL lesson that included writing with substantial teacher scaffolding is reported in Zhang and Silver (2006).

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Appendix A. Initial Teacher Questionnaire

Dear Teachers,
Thank you for agreeing to participate in our study! We regret taking up more of your time but hope you won't mind filling out a short questionnaire. This will give us some background information on the participating teachers.

We ask that you include your name at the bottom only so that we will know who has answered the questionnaire. The names will be deleted from our files and will not be used in any presentations or reports on this project.

Please complete the questionnaire and return it by post in the envelope provided.

Many thanks!

Rita Silver (Principal Investigator)
Galyna Kogut (Research Assistant)

Please answer the following questions about your teaching background:

Highest educational qualification achieved _____

Years of teaching experience _____ Years of teaching experience at this school _____

Subjects taught (current) _____

Grade levels taught (current) _____

Please answer the following questions about language use:

Language(s) most commonly used at home (list in order of most commonly used to least commonly used)

_____
_____

Language(s) most commonly used at work with the colleagues (list in order of most commonly used to least commonly used)

_____
_____

Language(s) most commonly used with the students outside class (list in order of most commonly used to least commonly used)

_____-
_____

For the classes that were observed, please answer the following questions:

Textbook used for EL
_____

Textbook used for non-EL course observed (if any)

_____
_____

Are these textbooks required? EL yes / no
Non-ELyes/ no

Supplementary books used for EL
_____

_____
_____

Supplementary books used for non-EL class observed
_____

_____
_____

Are these supplementary textbooks required? EL yes / no
Non-ELyes/ no

Thank you for your help and cooperation!

Appendix B. Lessons Observed, Recorded and Coded

This appendix shows the total lessons observed, recorded and coded using the PWPT classroom coding scheme (Silver & Kogut, n.d.) for Stage 1 (Table B1) and Stage 2 (Table B2) of the study.

Table B1. Summary of observed lessons, Stage 1

Teacher[1]	Total O&R[2]	Total coded	Total EL[3] O&R	Total EL coded	Total CA[3] O&R	Total CA coded	Subject of CA	Grade level
Amanda	6	5	2	2	4	3	Science	P3
Melanie	8	7	4	3	4	4	Maths	P3
Jeffrey	6	4	3	2	3	2	PE	P3
Alison	6	6	3	3	3	3	Maths	P1
Janice	6	5	3	2	3	3	Maths	P1
Total	32	27	15	12	17	15		

[1]Pseudonyms are used for all teachers
[2]O&R = observed and recorded
[3]EL = English language classes; CA = content area classes

Table B2. Summary of lessons observed and recorded, Stage 2[4]

Teacher[1]	Total O&R[2]	Total coded	Total EL[3] O&R	Total EL coded	Total CA[3] O&R	Total CA coded	Subject of CA
Amanda	7	6	3	3	4	3	Social Studies (2), Science (1)
Melanie	7	6	4	3	3	3	Math (3)
Genie	8	8	6	6	2	2	Math (1), Science (1)
Yvonne	8	8	6	6	2	2	Math (2)
Total	30	28	19	18	11	10	

[1]Pseudonyms are used for all teachers
[2]O&R = observed and recorded
[3]EL = English language classes; CA = content area classes
[4]Grade levels for Stage 2 are not given to maintain the anonymity of all teachers.

Appendix C. Frequency of PP Types by Teacher for Stage 2

PP type used	Teacher & percentage of use								Total	
	T1	%	T2	%	T6	%	T7	%	Freq	%
WCTF	38	82.6	67	84.8	58	79.5	42	67.7	205	78.8
Individual private	5	10.9	7	8.9	3	4.1	7	11.3	22	8.5
Small group work	0	0	2	2.5	5	6.8	7	11.3	14	5.4
WCSF	0	0	0	0	4	5.5	3	4.8	7	2.7
Large group work	2	4.3	0	0	0	0	3	4.8	5	1.9
Pair work	0	0	2	2.5	2	2.7	0	0	4	1.5
Individual public	0	0	1	1.3	1	1.4	0	0	2	0.8
Free movement	1	2.2	0	0	0	0	0	0	1	0.4
Total	46	100	79	100	73	100	62	100	260	100
Peer work total	2	4.3	4	5	7	9.5	10	16.1	23	8.8

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